

Appl. No. 10/669,968
Amdt. Dated July 20, 2004
Reply to Office Action of April 20, 2004

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (currently amended): An electrical interconnection system, comprising:

- a first printed circuit board defining a receiving slot;
- a second printed circuit board having an edge received in the receiving slot of the first printed circuit board; and
- an electrical connector mounted to one of the first and the second printed circuit boards and comprising contacts each electrically connecting with the first and the second printed circuit boards.

Claim 2 (original): The electrical interconnection system as recited in claim 1, wherein the first printed circuit board has first conductive pads arranged along the receiving slot, and wherein the second printed circuit board has second conductive pads arranged parallel to the edge of the second printed circuit board.

Claim 3 (original): The electrical interconnection system as recited in claim 2, wherein the electrical connector is securely mounted on the second printed circuit board, and wherein the contacts moveably contact with the first and the second conductive pads of the first and the second printed circuit boards.

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Claim 4 (original): The electrical interconnection system as recited in claim 1, wherein the connector has a mating face facing the first printed circuit board and a mounting face facing the second printed circuit board, and wherein the connector defines a plurality of passageways between the mating face and the mounting face and in which the contacts are moveably received.

Claim 5 (original): The electrical interconnection system as recited in claim 1, wherein the connector comprises an actuator for applying a driving force to the contact to move a first end of the contact along the first printed circuit board and to move a second end of the contact along the second printed circuit board.

Claim 6 (original): The electrical interconnection system as recited in claim 5, wherein the actuator is engaged with the second end of the contact.

Claim 7 (original): The electrical interconnection system as recited in claim 5, wherein the connector includes a biasing spring applying a driving force to the contact.

Claim 8 (original): The electrical interconnection system as recited in claim 7, wherein the biasing spring is coupled to the first end of the contact.

Claim 9 (original): The electrical interconnection system as recited in claim 1, wherein the first and the second printed circuit boards respectively define a first plane and a second plane perpendicular to each other, and wherein the contacts defines a third plane serving as a hypotenuse of a triangle defined by the first, the second and the third planes.

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Claim 10 (original): An electrical interconnection system, comprising:
a plurality of first printed circuit boards;
a plurality of second printed circuit boards;
a plurality of receiving slots defined in each first printed circuit board, the first and the second printed circuit boards intersecting with each other through the slots to define a plurality of nodes each configured by first, second, third and fourth quadrants; and
at least one electrical connector arranged in at least one of the four quadrants of each node to electrically interconnect the first and the second printed circuit boards.

Claim 11 (original): The electrical interconnection system as recited in claim 10, wherein the at least one connector comprises a first connector arranged in the first quadrant and a second connector arranged in the fourth quadrant to have a substantially mirror-image relationship with the first connector.

Claim 12 (original): The electrical interconnection system as recited in claim 11, wherein the first and the second connectors are mounted on the second printed circuit board, and wherein the first printed circuit board is electrically sandwiched between the first and the second connectors.

Claim 13 (original): The electrical interconnection system as recited in claim 12, wherein the first connector comprises a first actuator having a first actuating direction, and the second connector comprises a second actuator having a second actuating direction opposite to the first actuating direction.

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Claim 14 (currently amended): An electrical interconnection system, comprising:

- a printed circuit board having a first surface;
- a first group of conductive pads arranged on the first surface;
- a second group of conductive pads arranged on the first surface and spaced from the first conductive pads;

- a first electrical connector mounted on the printed circuit board over the first group of conductive pads and defining a first mating face, the first electrical connector comprising first contacts moveably contacting with the first conductive pads; and

- a second electrical connector mounted on the printed circuit board over the second group of conductive pads and defining a second mating face facing the first mating face, the second electrical connector comprising second contacts moveably contacting with the second conductive pads.

Claim 15 (original): The electrical interconnection system as recited in claim 14, wherein the first and the second mating faces define a first channel therebetween adapted for electrically receiving another printed circuit board therein.

Claim 16 (original): The electrical interconnection system as recited in claim 15, wherein the first and the second electrical connectors each comprise contacts and an actuator adapted for actuating the contacts to electrically contact with the another printed circuit board.

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Claim 17 (original): The electrical interconnection system as recited in claim 16, further comprising a third and a fourth connectors mounted on a second surface of the printed circuit board, and wherein the third and the fourth connectors have a mirror-image relationship with the first and the second connectors, respectively.

Claim 18 (original): The electrical interconnection system as recited in claim 17, wherein the third and the fourth electrical connectors define a second channel therebetween adapted for electrically receiving the another printed circuit board.

Claim 19 (original): The electrical interconnection system as recited in claim 18, wherein the third and the fourth electrical connectors each comprise contacts and an actuator adapted for actuating the contacts to electrically contact with the another printed circuit board.

Claim 20 (original): An electrical interconnection system comprising:
a first set of parallel printed circuit boards with thereof corresponding first front edge sections facing toward a first direction;
a second set of parallel printed circuit boards with thereof corresponding second front edge sections facing toward a second direction opposite to said first direction; and
a first plane defined by each of said first set of printed circuit boards and a second plane defined by each of said second set of printed circuit boards being arranged in a non-parallel relation,
said first front edge sections extending through said second set of printed circuit boards, and said second front edge sections extending through said first set of printed circuit boards; wherein

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said first set of printed circuit boards and said second set of printed circuit boards are interwoven with each other around said first front edge sections and said second front edge sections.

Claim 21 (original): The system as recited in claim 20, wherein said first plane is perpendicular to said second plane.

Claim 22 (currently amended): The system as recited in claim 21, wherein said first set of printed circuit boards and said second set of printed circuit boards constitute a grid format from a viewpoint along a third direction perpendicular to a fourth direction defined by a first front edge of the first front edge section and a fifth direction defined by a second front edge of the second front edge section.

Claim 23 (original): An electrical interconnection system comprising:
at least one first printed circuit board with thereof a corresponding first front edge section facing toward a first direction;
at least one second printed circuit board with thereof a corresponding second front edge section facing toward a second direction and also toward said first front section; and
a first plane defined by said first printed circuit board and a second plane defined by said second printed circuit board being arranged in a non-parallel relation,
said first front edge section and said second front edge section intersecting with each other; wherein
an intersection line of said first front edge section and said second front edge section is perpendicular to both a first front edge of said first front edge section and

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a second front edge of said second front edge section.

Claim 24 (original): The system as recited in claim 23, wherein said first front edge section and said second front edge section commonly define four quadrants sharing a common center line defined by said intersection line, and at least one electrical connector is located in one of said four quadrants and mounted to at least one of said first printed circuit board and said second printed circuit board while electrically connecting to both said first and second printed circuit boards.

Claim 25 (original): The system as recited in claim 24, wherein said connector includes an array of contacts side by side arranged along a direction parallel to a direction defined by said intersection line.

Claim 26 (original): The system as recited in claim 24, wherein non-parallel relation refers to a right angle relation.

Claim 27 (original): The system as recited in claim 24, wherein said first direction and said second direction are opposite to each other.